

## CLAIM AMENDMENTS

1-2. (Cancelled)

3. (Presently Amended) The implant of claim 44 comprising fibers formed of one or more of: stainless steel, cobalt-chrome alloy, titanium, titanium alloy, or nickel-titanium shape memory alloys.

4. (Presently Amended) The implant of claim 44 wherein the network of fibers is substantially nonelastic.

5. (Presently Amended) The implant of claim 44 wherein the network of fibers comprises a three dimensional array of fibers.

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6. (Presently Amended) The implant of claim 44 wherein the network of fibers comprises a deformable sheet or fabric-like material.

7. (Presently Amended) The implant of claim 6 wherein at least a portion of the network of fibers is deformable to conform to a selected bone structure.

8. (Presently Amended) The implant of claim 44 comprising a second network of fibers formed of a material selected from the group consisting of: biocompatible polymeric materials, nylon fibers, carbon fibers, glass fibers, collagen fibers, ceramic fibers, polyethylene fibers, poly(ethylene terephthalate), polyglycolides, polylactides, and combinations thereof.

9. (Presently Amended) The implant of claim 8 wherein the second network of fibers is biodegradable.

10. (Presently Amended) The implant of claim 1-44 wherein the one or more reinforcing elements is formed of a material selected from the group consisting of: stainless steel, cobalt-chrome alloy, titanium, titanium alloy, or nickel-titanium shape memory alloys, biocompatible polymeric materials, nylon fibers, carbon fibers, glass fibers, collagen fibers, ceramic fibers, polyethylene fibers, poly(ethylene terephthalate), polyglycolides, polylactides, and combinations thereof.

11. (Presently Amended) The implant of claim 1-44 wherein said interconnecting network of fibers comprises a first set of fibers interwoven or bonded to a second set of fibers.

12. (Presently Amended) The implant of claim 1-44 adapted to secure to at least two adjacent vertebral bodies to promote spinal fixation.

13. (Presently Amended) The implant of claim 1-44 adapted to be inserted into a prepared disc space to promote spinal fusion.

14. (Presently Amended) The implant of claim 1-44 wherein at least a portion of the interconnecting network of fibers is impregnated with an osteogenic material.

15. (Presently Amended) The implant of claim 1-44 comprising a first interconnecting network of fibers overlayed with a second interconnecting network of fibers.

16. (Presently Amended) The implant of claim 15 wherein the first interconnecting network of fibers comprises a three dimensional array of fibers.

17. (Presently Amended) The implant of claim 15 wherein the implant is deformable to conform to a selected bone structure.

18. (Presently Amended) The implant of claim 15 wherein the first and second network of fibers are secured together using a securing element selected from the group consisting of: an adhesive, a curable polymeric material, a suture, a staple, and combinations thereof.

19. (Presently Amended) The implant of claim 15 wherein the first and second network of fibers are secured together to provide a barrier sufficiently porous to permit interdiffusion of an osteogenic material therethrough.

20. (Presently Amended) The implant of claim 144 comprising a second set of fibers formed of a biocompatible polymeric material.

21. (Presently Amended) The implant of claim 144 wherein the reinforcing element is formed of a shape memory polymeric or metallic alloy material.

22. (Presently Amended) The implant of claim 144 wherein the reinforcing element is adapted to conform to a preselected bone structure.

23. (Presently Amended) The implant of claim 144 adapted to interconnect proximal bone structures as a prosthetic ligament, a tension band or an external fixation device.

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24-31. (Cancelled)

32. (Withdrawn) An orthopedic implant for promoting bone fusion, said implant comprising:

    a body including a wall portion formed of an interconnecting network of metallic fibers, said body defining an internal cavity; and  
    at least one reinforcing element connected to said fibers.

33. (Withdrawn) The implant of claim 32 comprising an osteogenic material.

34. (Withdrawn) The implant of claim 32 comprising fibers formed of one or more of: stainless steel, cobalt-chrome alloy, titanium, titanium alloy, or nickel-titanium shape memory alloys.

35. (Withdrawn) The implant of claim 32 wherein the network of metallic fibers is substantially nonelastic.

36. (Withdrawn) The implant of claim 32 wherein the network of fibers comprises a three dimensional array of fibers.

37. (Withdrawn) The implant of claim 32 comprising an opening through said wall portion into said internal cavity.

38. (Withdrawn) The implant of claim 32 comprising a core material disposed in the internal cavity.

39. (Withdrawn) The implant of claim 38 wherein the core material comprises an osteogenic material.

40. (Withdrawn) The implant of claim 38 wherein the core material is a curable material.

41. (Withdrawn) A method of treating a bone defect, said method comprising implanting an implant according to claim 35 proximal to a bone defect.

42. (Original) An orthopedic implant comprising:

a plurality of metallic fibers interconnected together at junctures to form a network;

two or more ~~elongate members~~ reinforcing elements extending across a portion of the network adjacent said junctures, each of said ~~elongate members~~ reinforcing elements provided to exhibit a tensile strength greater than a selected metallic fiber of the plurality of metallic fibers;

an osteogenic material impregnated in said network, wherein said implant is adapted to induce bone fusion between adjacent bone structures.

43. (Withdrawn) An orthopedic implant for promoting bone fusion, said implant comprising:

a body including a wall portion formed of an interconnecting network of metallic fibers, said body defining an internal cavity and having an opening through the wall portion into the internal cavity; and

at least one elongated member extending into said cavity, said elongate member provided to exhibit a tensile strength greater than a selected metallic fiber of the interconnecting network of metallic fibers wherein said implant is adapted to induce bone fusion between adjacent bone structures.

44. (Presently Amended) An orthopedic implant for connecting adjacent bone structures, said implant comprising:

an interconnecting network of metallic fibers each fiber joined to an adjacent fiber at a juncture; said juncture, said interconnecting network bounded by a reinforcing band;

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two or more elongate members reinforcing elements extending across a portion of the network adjacent said junctures, each of said elongate members reinforcing elements provided to exhibit a tensile strength greater than a selected metallic fiber of the interconnecting network of metallic fibers; and

an osteogenic material adhered to at least a portion of the implant, said implant adapted to promote bone ingrowth.

45. (Presently Amended) A method of treating a bone defect, said method comprising:

preparing a site of treatment to accept an orthopedic implant;  
implanting proximal to said site an orthopedic implant comprising an interconnecting network of metallic fibers said interconnecting network bounded by a reinforcing band, and having one or more reinforcing elements secured to said network of metallic fibers,

applying an osteogenic material to said implant or to said bone defect to promote bone fusion.

46. (Original) The method of claim 45 wherein said implant is a bone plate.

47. (Original) The method of claim 45 wherein said implant is a bone spacer.

48. (Original) The method of claim 45 wherein said implant comprises a body defining a cavity.

49. (Original) The method of claim 45 wherein said applying comprising applying the osteogenic material to the implant prior to implantation.

50. (Original) The method of claim 45 wherein said applying comprising applying the osteogenic material to the implant after implantation.

51. (Presently Amended) An orthopedic implant comprising:  
a bone fixating prosthesis comprising an interconnecting network of metallic fibers that is deformable to conform to a selected bone structure;  
one or more reinforcing elements secured to said network of metallic fibers; and,  
one or more bone fasteners extending through the network of metallic fibers; and  
an osteogenic material impregnating at least a portion of the interconnecting network of fibers, wherein said implant is adapted for promoting fusion between adjacent bone structures.

52. (Previously Presented) The implant of claim 51 wherein the interconnecting network of fibers comprises a deformable sheet or fabric-like material.

53. (Previously Presented) The implant of claim 51 adapted to secure to at least two adjacent vertebral bodies to promote spinal fixation.

54. (Withdrawn) The implant of claim 51 adapted to be inserted into a prepared disc space to promote spinal fusion.

55. (Withdrawn) The implant of claim 51 wherein the bone fixating prosthesis defines a body having an internal cavity.

56. (Previously Presented) The implant of claim 51 wherein the reinforcing element comprises a reinforcing band bounding the interconnected network of metallic fibers.

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57. (Previously Presented) The implant of claim 51 wherein the reinforcing element comprises an elongate rod.

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